

tions, we feel like Garrick in Sir Joshua's celebrated picture, and hardly know whether to make choice of the tragic or the comic muse in criticising them. It may therefore be as well to say no more on the subject.

PROCEEDINGS OF LEARNED SOCIETIES.

ZOOLOGICAL SOCIETY.

June 9, 1863.—John Gould, Esq., F.R.S., in the Chair.

ON A NEW SPECIES OF PARRAKEET FROM CENTRAL AUSTRALIA.
By JOHN GOULD, F.R.S., ETC.

The Board of Governors of the South Australian Institute having liberally forwarded for my inspection a selection from the ornithological collection made by Mr. Frederick G. Waterhouse during Mr. Stuart's late Exploratory Expedition into Central Australia, I have thought the matter of sufficient interest to bring these birds under the notice of the Society, the more so as it will enable me to make known through our 'Proceedings' a new and very beautiful species of Parrakeet pertaining to the genus *Polyteles*, of which only two have been hitherto known. Every ornithologist must be acquainted with the elegant *P. melanurus* and *P. Barrabandi*, and I feel assured that the acquisition of an additional species of this lovely form will be hailed with pleasure. The specific appellation I would propose for this novelty is *Alexandræ*, in honour of that Princess who, we may reasonably hope, is destined at some future time to be the queen of these realms and their dependencies, of which Australia is by no means the most inconspicuous.

POLYTELES ALEXANDRÆ, sp. nov.

Forehead delicate light blue; lower part of the cheeks, chin, and throat rose-pink; head, nape, mantle, back, and scapularies olive-green; lower part of the back and rump blue, of a somewhat deeper tint than that of the crown; shoulders and wing-coverts pale yellowish green; spurious wing bluish green; external webs of the principal primaries dull blue, narrowly edged with greenish yellow, the remaining primaries olive-green, edged with greenish yellow; under wing-coverts verditer-green; breast and abdomen olive-grey, tinged with vinous; thighs rosy red; upper tail-coverts olive, tinged with blue; two centre tail-feathers bluish olive-green; the two next on each side olive-green on their outer webs and dark brown on the inner ones; the remaining tail-feathers tricoloured, the central portion being black, the outer olive-grey, and the inner deep rosy red; under tail-coverts olive; bill coral-red; feet mealy brown.

Total length 14 inches; bill $\frac{1}{2}$; wing 7; tail 9; tarsi $\frac{7}{8}$.

Habitat. Howell's Ponds, Central Australia, $16^{\circ} 54' 7''$ S. L.

Remark.—This is in every respect a typical *Polyteles*, having the delicate bill and elegantly striped tail characteristic of that form. It

is of the same size as *P. Barrabandi*, but differs from that species in having the crown blue and the lower part of the cheeks rose-pink instead of yellow.

DESCRIPTION OF A NEW LIZARD OBTAINED BY MR. HENRY CARTER ON THE SOUTH-EAST COAST OF ARABIA. BY DR. J. E. GRAY, F.R.S., ETC.

Mr. Carter, so well known for his researches on the Foraminifera, Sponges, and Microscopic Vegetables of India, has lately sent us, with a series of his different species of *Spongilla* of India, three dried Lizards from the south-east coast of Arabia. One of these is a young *Uromastix*; the others belong to an aberrant form of Geckoid Lizards, distantly allied to *Phyllurus*, which has not before occurred to me, and which we certainly have not in the Museum Collection. It is peculiar for having its tail flattened horizontally, and fringed on each side with linear elongated spreading scales. The scales of the body are minute and uniform in size. I propose to call this genus

SPATALURA.

Head short, high. Nostrils oblong, transverse, on the upper surface of the nose, just above the labial shields. The eyes large, with a slightly projecting scaly ridge above, separated from the orbit, and forming a kind of shade. Ears open, deep. Labial shields distinct, few, about eight on each side; the rostral formed of a pair of shields; the chin-shield single, like the rostrals. Head, body, and limbs covered with uniform small granular scales; femoral and preanal pores none. Limbs elongate, slender. Foot elongate. Toes elongate, compressed, very slender; the upper side with distinct cross plates; the sole with granular scales. Tail slender, oblong, depressed, not so long as the body, covered above and below with scales similar to, but rather larger and more keeled than, those of the body, and with a fringe on each side of crowded, elongated, slender, linear scales, with some smaller ones at their base.

This genus differs from all the other naked slender-toed Geckoid Lizards in the form of the tail; and it is also remarkable among these animals for the uniform granular character of the scales, the height of the head, and the slenderness of its legs and feet, which give it much the external appearance of some of the species of *Anolis*, which are without any dorsal crest; but it is easily known from them by the large-sized open eyes, destitute of any eyelids.

SPATALURA CARTERI.

Pale grey (dry from spirits) above, whitish beneath; belly of one (male?) orange; central part of the back, forearm, and shanks varied with square white spots; sides with numerous narrow, black-edged, yellow streaks, which are closer together and more visible on the hinder part of the body.

Hab. Island of Massera, on the eastern coast of Arabia.

I have great pleasure in naming this beautiful species after Mr. *Ann. & Mag. N. Hist.* Ser. 3. Vol. xiii.

Carter, who has laboured so successfully in extending our knowledge of many obscure Indian animals and plants.

Mr. Carter observes, "The two Lizards of a lavender or light lead-colour, with nearly invisible brown spots or lines, were caught in the island of Massera, which is about forty miles long, barren, and situated close to the shore of the south-east coast of Arabia, towards its easternmost end.

"The tail of one has dropped off. To the best of my recollection, it was not bushy or crested, like that of the one which remains on; and that at the time made me think the latter was the male, and the other the female of the species.

"It is just possible they may be new; for Massera is little known, and I think we (the surveying people) were the first white men who were ever on the island."

Most probably the tail of the second specimen, which was lost, might have been reproduced, and thus without the lateral fringe.

"The channel on the inner side of the island swarms with the Edible and Hawk's-bill or Turtle-shell Turtle; and the island is bestrewn with the bones of the former: for the inhabitants are all mere brutes (Anthropophagi and Ichthyophagi)."

This genus of *Geckotidæ* has many characters in common with the *Agamidæ*. Like *Eublepharis* it has a large circular pupil to the eye, and in this respect they form together an aberrant group of the family. In both these genera the pupil is large as well as circular. It is also peculiar, among the Geckoids, for the scales being all of a uniform size and character; but this is found in a few other species, such as *Boltanea sublevis*, where the minute sublenticular scales are often almost entirely wanting.

"The Prickly-tailed Lizard, of a light-brown colour, was caught in or close to the town of Makulla, a port on the south-east coast of Arabia.

"I regard it as the young of a species just like it, which grows to a foot or more in length, on the coast mentioned."

This is very nearly allied to *Uromastix spinipes*; but unfortunately the specimen is too young and not in a sufficiently good condition to determine if it is absolutely the same.

OBSERVATIONS ON AUSTRALIAN TREE-FROGS LIVING IN THE SOCIETY'S MENAGERIE. BY DR. A. GÜNTHER.

The only Australian Batrachian which, to my knowledge, has until lately been exhibited in the Society's menagerie is *Pelodryas cæruleus* (*Hyla cærulea*, White), a specimen of which, almost unobserved, lived there for two or three years. In the beginning of the spring of this year, however, an opportunity was taken of procuring eight specimens, which were imported by a collector from New South Wales, and which belonged to four species, viz. to *Pelodryas cæruleus*, *Hyla Peronii*, *Hyla Krefftii*, and to an apparently undescribed form, which we shall name *Hyla phyllochroa*. Having had an opportunity of observing these for some time in the Gardens in the

Regent's Park, as well as at my own house, I may make the following remarks. In general, I was surprised to find a great similarity in their habits with those of our common European Tree-frog. They sleep during the day, squatting in a corner, generally selecting a place in which they are hidden from view, but easily roused on the approach of some insect, which they seize with their tongue. When the prey is large, or when they have accidentally seized a small piece of wood, &c., together with the insect, they use their fore foot to push the insect into the mouth, or to remove the object which is unfit for food. They never enter the water during the summer months, and tried to escape from a tank when put into it. They leave their hiding-places towards dusk, becoming very lively, apparently less with the object of obtaining food (which they can only procure by quietly remaining in wait for it) than with that of enjoying themselves; and *Pelodyas cæruleus*, which is endowed with a voice, indulged every evening in a musical performance. They became more quiet after midnight, and at sunrise they had settled down at some resting-place, sometimes one individual choosing the same place for several consecutive days. They preferred bluebottle flies to every other insect, and never touched ants or black beetles. *Pelodyas cæruleus* feeds freely on meal-worms when other food is scarce; but they are frequently vomited, and I doubt whether these frogs could be kept in good health if restricted to this particular kind of food. In all these points the Australian species mentioned agree with the European Tree-frog, and I need hardly say that they as easily climb smooth surfaces, glass, &c., as the latter species.

Pelodyas cæruleus, White (Günth. *Batr.* Sal. pl. 9. fig. B).—The natural colour of this species is a light grass-green, which, when the animal is kept in the dark or in a very wet place, changes into dark sap-green; roundish yellowish-white spots are sometimes scattered on the sides. I have mentioned above that it has a voice, which is a kind of grunting, somewhat resembling that of *Rana esculenta*, but lower. I must remark, however, that the two examples in the menagerie, a male and female, are evidently not full-grown; and I was rather surprised to hear a voice at all from the male, as in *Hyla viridis* the vocal sac and the voice are not developed before the individual has attained to maturity and to its full size. The hind limbs are comparatively short, and therefore this species cannot make such wide jumps as the true *Hylæ*. I could not observe any secretion from the parotid glands, which are so much developed in full-sized individuals, but which are scarcely perceptible in our specimens. These Frogs soon became familiar, especially the male, which, when I went to feed them, used to approach and to watch the opening through which I introduced the flies into their cage.

Hyla Peronii, Bibron.—This species is very remarkable on account of the change of its colours. When awake, it is brownish olive, covered all over with blackish-brown spots, between which small green dots are scattered; the anterior and posterior sides of the thigh and the loin are bright yellow, with irregular reticulated black spots. The pupil is open, horizontally elliptic, and crossed by a very distinct

blackish vertical band. When asleep, the dark spots disappear entirely, the ground-colour becomes lighter, the green dots are very indistinct, and the numerous tubercles with which the skin is covered are whitish at the top. The pupil is contracted into a minute square opening, from which four black lines radiate.

This species is very nimble in its motions, making great leaps when pursued, and darting after flies from 8 to 10 inches distant; but it frequently misses its aim in these attempts. I have heard it emit a sound, but only when it was caught, and which I cannot otherwise describe than by comparing it with that emitted by *Hyla arborea* under similar circumstances.

Hyla Krefftii.—A single specimen of this species, lately described by myself*, being in the collection, I am enabled to give a description of the natural colours. A broad brown band commences between the eyes and extends to the vent, occupying the back almost entirely; it is lighter along the middle; another dark-brown band descends obliquely from the eye to the humeral pit; the sides are light reddish olive, and covered with minute brown dots, like the back. The hind part of the thigh is of a beautiful purple colour. This species changes its colours but little; but they appear darker and the markings more intense when the animal is awake than when asleep. Our specimen is much less greedy and less active than *H. Peronii*, although it is not less slender, and makes leaps as long as the other species; it selects its hiding-place on the ground below some stones. I have not heard any voice from it; but I am not certain about its sex.

Hyla phyllochroa, n. sp.—Snout rather short, broad, with the canthus rostralis angular. The vomerine teeth form two very small groups, situated behind the level of the hinder edge of the inner nostrils. Tympanum distinct, much smaller than the eye. Tongue scarcely notched behind. Perfectly smooth above; belly granular; a fold across the chest. Fingers one-fourth webbed; the membrane between the toes does not extend to the terminal disk. Uniform green above, white below; a very narrow, slightly prominent black line, edged with yellow superiorly, runs from the eye, above the tympanum, to the side of the body, where it is lost.

Besides the living specimen in the Society's menagerie, I have examined three others in the British Museum (two from Sydney, received through Messrs. Cuming and Krefft, and one from Errumanga, new). This species possesses the faculty of changing its colours only in a slight degree; it is generally of a uniform light sap-green, which, under certain circumstances, becomes darker. I have not heard a voice from it. Those in the British Museum are females; the largest has the ovaria fully developed, and measures 17 lines from snout to vent; the hind leg 29 lines.

NOTICE OF A NEW SPECIES OF BATAGUR FROM NORTH-WESTERN INDIA. BY DR. J. E. GRAY, F.R.S., F.L.S., ETC.

Sir Andrew Smith, M.D., lately sent to the British Museum,

* Ann. & Mag. Nat. Hist. 1863, xi. p. 28, pl. 4. fig. C.

with some other interesting reptiles, a young specimen of *Batagur* from the River Chenab, which seemed different from any that I had hitherto seen; but I was disinclined to describe a species on a single specimen in a young condition.

Dr. Günther, the other day, found in a collection that was offered for sale at Chatham a specimen of a *Batagur*, which he thought was different to any that we had in the Museum; and I have little doubt that this specimen is an older and probably nearly adult specimen of the same species as that sent to the Museum by Sir Andrew Smith. I therefore proceed to give a short notice of them.

The species is intermediate in character between the sections *Kachuga* and *Pangshura*. It has the elongated rhombic fourth vertebral plate of *Pangshura*; but the feet are very broad, the toes long, the claws elongate; the back is evenly rounded, and the second vertebral plate broad and six-sided, as in *Kachuga*.

BATAGUR SMITHII.

Shell oblong above, rather wider and very slightly dentated behind; the back regularly rounded, interruptedly and subnodosely keeled. The three first vertebral shields oblong; the first rather urceolate; the second subhexangular, rather broader than long; the third narrower, nearly twice as long as broad, with a prominent keel on the hinder half; the fourth very long, tapering, and very narrow in front, square, truncated, and keeled behind; nuchal shield small; marginal shields broad, the sixth and tenth with the upper edge produced upwards; the sternum flat, slightly keeled on the sides, white, it and the underside of the marginal shields blotched with blackish; the gular plate triangular.

Hab. North-western India: Punjab; "River Chenab, 3rd December, 1848."

The younger specimen is not so strongly keeled; the second and third vertebral plate are rather broader compared with their length, and the fourth is more nearly lozenge-shaped.

This species, which will be figured in Dr. Günther's 'Reptiles of British India,' which he is preparing for the Ray Society, may be known from *B. lineata*, which it most resembles, by the shell being more ovate, and by the form of the fourth vertebral plate, which is so contracted in front that it is not wider than the keel of the third vertebral shield.

I have named this species after my excellent friend Sir Andrew Smith, the late Director-General of the Army Medical Board, an encourager of science, and very accurate and industrious herpetologist and traveller.

DESCRIPTION OF A NEW *GEOCLEMYS* LATELY LIVING IN THE GARDENS OF THE ZOOLOGICAL SOCIETY. BY DR. J. E. GRAY, F.R.S., F.L.S., ETC.

Some time ago the British Museum received a *Geoclemys* from the Zoological Society that had been living in the Gardens, which we have preserved in spirits. Having occasion to examine it the

other day, in connexion with some other Terrapens more lately received, it appears to be distinct from any other that we have, and from any that I can find described. Unfortunately it was not accompanied by any account whence it came, so that I cannot give its habitat.

GEOCLEMYS CALLOCEPHALUS.

Shell oblong, convex, bluntly keeled; dark blackish brown; shields thin, slightly ringed, the margin nearly entire; vertebral shields about



as long as broad, the second and third rather longer; nuchal shield short; the marginal shields broad, the ninth rather higher than the rest; underside of these yellow, not spotted or ringed; the sternum convex, rather bent up in front, broadly truncated before, and behind pale yellow, more or less blackish on each side of the central line. The upper part and side of the neck pale; the upper part of the legs closely speckled with minute black dots; the front of the fore legs pale, with some black spots on the edge of the large flat scales which cover this part; the front toes short, coalesced nearly to the claws, with a few rather narrow angular shields on the upper surface; the palms covered with moderate scales, and with a cross row of five large, nearly uniform-sized, squarish shields on the hinder part of the wrist; the hind legs covered with small scales; the hind foot broad, the toes short, and coalesced like the front one, but with rather larger shields above the soles, with moderate-sized scales, and with some large triangular shields at the hinder part of the heel, in two or three series; the chin and throat white, spotless; the head rather flattened; the eyes lateral; upper jaw slightly notched in front; the crown of the head (in spirits) pale, with three black-edged white broad streaks concentric one within the other, and diverging parallelly towards the occiput, where they are lost among the black specks; cheek with five or six narrow black horizontal lines, the lower bending up to the tip of the ears; there is an obscure black streak from the nose to the middle of the orbit, and a narrow streak near the upper edge of the upper jaw, and some black oblong spots on the lower side of the ear and temple, which may be more distinct in the living specimen.

Hab. Unknown; perhaps China.

This species in several respects agrees in form and appearance with *Emys chinensis*, of which, as is shown by the specimen brought by Mr. Swinhoe to this country, the Tortoise described by me as *Emys Bennetti* is only the adult. It is at once known from *E. chinensis* by the minutely speckled body and the bands on the head, and by

the under surface of the marginal shield being destitute of any rings or spots. The head and neck of *E. chinensis* are covered with uniform narrow black lines, which on the chin and throat form circles. *E. chinensis*, like *E. Bealei*, is a true *Emys*, with slender, distinctly developed toes and fingers, which are united by a web to the claw,—*E. chinensis* having moderate-sized thick scales in the front of the fore legs, with some larger and broader scales, or small shields, scattered among them, and *E. Bealei* small granular scales on the legs, with three or four broad, thin, lunate, band-like shields across the front of the fore legs.

In the black speck on the neck and body, and the ornamental lines on the head, this species has some affinity to *E. pulcherrima*, described and figured in my Catalogue from a very young specimen, said to come from Mexico. But this habitat is doubtful, as some other animals, procured from the same person and said to be from the same habitat, have proved to be from other countries. This species also, as far as can be judged from the dry state of the specimen, may probably be a *Geoclemys*.

DESCRIPTION OF A NEW SPECIES OF MACRUROUS DECAPOD
CRUSTACEAN BELONGING TO THE GENUS PENÆUS, FROM
THE COAST OF PORTUGAL. BY JAMES YATE JOHNSON,
CORR. MEM. Z. S.

PENÆUS BOCAGEI, sp. n.

The subcylindrical carapace is less than half the length of the abdomen, including the caudal segment, and is excavated at the middle of the posterior margin. A median crest commences near the posterior margin, and projects in front as the rostrum, which is more than half the length of the carapace. This rostrum extends much beyond the eyes, but not quite so far as the distal extremity of the peduncle of the superior antennæ. It has a slight sigmoid flexure, is compressed, and is marked at each side with two low crests and two grooves. Its lower edge is simple; but its upper edge carries eight small teeth, the first of which is over its base, and the last some little distance from its anterior extremity. There is a fringe of hair at the lower edge posteriorly. The median crest of the carapace carries a single tooth, which is distant from the anterior margin about one-third of the length of the carapace. At each side of the carapace, a little in front of this tooth, there is a large tooth or small spine, in the neighbourhood of which there is a depression. Above the spine a narrow and somewhat sinuous groove extends nearly the whole length of the carapace. A little behind each anterior angle of the carapace there is another spine smaller than the one last mentioned. The anterior margin of the carapace is deeply excavated at the base of the inferior antennæ, and between this excavation and the base of the ocular peduncle there is a strong sharp tooth or spine; whilst over the base of the eye-stalk there is a minute angular projection, hardly to be called a tooth. The eye is large, being both broader and longer than its stalk.

The superior antennæ have the basal joint of the peduncle broad and much hollowed to receive the eye, and its inner border carries a short lamellar appendage. Each has two filaments with thickened bases, of which one is nearly twice as long as the other, and the longer has a length nearly equal to that of the carapace exclusive of the rostrum. The basal joint of the inferior antennæ is short and thick, and it has a small emargination in front on the upper side. Their palps are large, extending very nearly as far as the rostrum, and they are shaped like the quarter of an elongated ellipse; but the thick outer margin curves slightly inwards, and projects in front as a short tooth. The inner margin is fringed with hair. The filament is longer than the total length of the Crustacean, including the rostrum.

All the feet are slender, and the first three pairs are two-fingered, with ovate hands, the rest being monodactyle: none are multiarticulate. The order of their length, commencing with the longest, is 5, 4=3, 2, 1; the third and fourth pairs reach beyond the eyes; the first pair has a fringe of hair at the under edges of all the joints, and the second and third joints each carry a spine at the distal extremity of the underside. The first pair of pedipalps is long, slender, and pediform; they extend beyond the eyes.

The abdomen is subcompressed in front, much compressed behind, and the anterior five segments are furnished with large and prominent false feet, each terminated by a pair of narrow flexible plates fringed with hair, of which the outer one is longer; the basal joint is shorter than either. All the segments have their inferior margins fringed with hair. The fourth, fifth, and sixth segments possess a median keel, which terminates posteriorly with a small sharp tooth; and the sixth segment has in addition a small tooth at each posterior angle. The posterior margins of the fourth and fifth segments have a small notch at the middle of each side. The seventh or caudal segment is about as long as the sixth, which is longer than any of the preceding segments; it is narrow, terminates in a point, and is armed with a small spine at each side near the posterior extremity. The lateral plates are narrowly oval and fringed with hair; both pairs extend beyond the seventh abdominal segment, but the outer plates are larger than the inner, which latter have a longitudinal median groove on the upper surface between two low crests. There is also a groove on the upper surface of the exterior plates; but it is not in the median line, and it terminates at the outer margin not far from the posterior extremity of the plate. At this place there is a small sharp tooth, and here commences a low crest which crosses the plate with a curve and divides it into two unequal portions. The common basal joint of these plates has a small sharp tooth at its postero-exterior angle.

Large quantities of this *Penæus* are taken at the mouth of the Tagus during the spring and summer months; and it frequently appears on the breakfast-tables of the hotels in Lisbon, where indeed it first attracted my attention. It is known in the market under the name of "Camarão," *i. e.* Prawn. The living Crustacean has a pale

red colour, which deepens on being boiled into the pinky red of our Prawn. It may be readily distinguished from *Penæus Caramote*, which has also been taken on the coast of Portugal, by the single crest on the carapace, by the absence of teeth from the underside of the rostrum, by the presence of a spine near the anterior lateral angles of the carapace in addition to the spine between the bases of the inferior antennæ and the eye-stalks, by the much greater length of the filaments of the superior antennæ, which in *P. Caramote* are not more than a fourth of the length of the carapace minus the rostrum, by the absence of spines from the two basal joints of the second and third pairs of legs, and by the presence of a single spine, in place of three, at each side of the caudal segment of the abdomen.

Examples having a total length, including the rostrum, of $5\frac{1}{4}$ inches, and a carapace with a width of rather more than half an inch, are not uncommon; but the finest specimen I have seen was kindly presented to me by Dr. J. V. Barbosa de Bocage, Director of the Royal Museum of Lisbon. This specimen, which is now in the British Museum, has the following dimensions:—

	inches.
Total length from tip of rostrum to end of caudal plates	$6\frac{6}{16}$
Rostrum, length	$1\frac{1}{8}$
Carapace, without rostrum, measured at the side, and including the frontal spine	$1\frac{10}{16}$
Carapace, width	$\frac{10}{16}$
Abdomen, length to the tip of the caudal segment . .	$3\frac{19}{32}$
First legs, length	$1\frac{1}{8}$
Fifth legs, length	$2\frac{1}{16}$
Outer pedipalps, length	$1\frac{9}{16}$

DESCRIPTION OF A NEW SILICEOUS SPONGE FROM THE COAST OF MADEIRA. BY JAMES YATE JOHNSON, CORR. MEM. Z. S.

Order SILICEA, Bowerbank.

DACTYLOCALYX, Bowerbank, Phil. Trans. 1862.

Skeleton siliceo-fibrous. Fibres solid, cylindrical. Reticulations unsymmetrical.

DACTYLOCALYX BOWERBANKII, sp. n.

The skeleton of this sponge is composed of an inelastic network of siliceous fibres of a dense and irregular structure. Under a power of sixty diameters a slice of it resembles the crumb of bread, without any trace of the structure resembling spoked wheels, such as is exhibited by a siliceous sponge preserved in the Museum at Paris under the name of *Iphiteon*,—a similar structure being also seen in the pith of some water-plants. The fibre is smooth, but somewhat nodulous. The skeleton is covered with a rather thin crust, of a close texture, without conspicuous orifices, and this crust abounds with large spicula of the form denominated “spiculated patento-ternate” by Dr. Bowerbank in his memoir read before the Royal Society in 1857; and some of them are developed into the dichotomo-patento-ternate

form, such as is represented in fig. 48 of plate 23 of the 'Philosophical Transactions' for that year. But in the sponge under description the shaft is not prolonged through the common base of the triradiating branches, and the second division of these branches is much longer than the first or third; the third division, or ultimate branchlets, are pointed, and not in the same plane with each other or with the preceding portion of the branch, just as in the case of the spiculum represented in the figure already referred to. The shafts of the spicula project into the reticulations of the skeleton. In addition to the large spicula, the dermal membrane abounds with minute elongato-stellate spicula having short stout cylindrical radii; and a very few of these are dispersed in the interstitial membranes beneath the dermis. On the surface of the skeleton, immediately beneath the dermis, there is an abundance of long acuate spicula, disposed either singly or in fasciculi which are often parallel with each other. These acuate spicula are not found in the deeper interstitial portions of the sponge, but a few long, very slender, and flexuous spicula are occasionally to be found there. No sexradiate spicula could be detected, nor were any gemmules observed.

The single example of this sponge which has been obtained was brought up from deep water off the coast of Madeira. It was attached to a rock or stone by the middle portion of the underside. Its colour is white; and although its texture even when fresh was firm, the finger-nail easily made a permanent impression upon its surface. The animal matter was in comparatively small quantity. When a portion of the sponge was immersed in nitric acid it acquired a yellow tinge. The shape is that of a concave disk or shallow cup, with the border undulated into a few strong folds, some of which rise two or three inches above the rest of the surface. In one instance the opposite sides of a fold have grown together. The general appearance calls to mind a large fungus such as is sometimes seen attached to the trunk of an old tree. It measures fourteen inches across in one direction, in another twelve inches, and it has a thickness varying from half an inch to nearly an inch.

Dr. Gray has had the kindness to let me examine the half of a siliceous sponge which came into his possession from Mr. Stutchbury, who obtained it, I understand, from Barbadoes, and described it in the 'Proceedings of the Zoological Society,' 1841, p. 86, under the name of *Dactylocalyx puniceus*, in these words:—"Sponge fixed, siliceous; incurrent canals uniform in size; excurrent canals large, forming deep sinuosities in the outer surface, radiating from the root to the outer circumference." Comparing the sponge now described with Dr. Gray's, I find in mine no well-marked system of incurrent and excurrent canals with large orifices, as in the Barbadian sponge, which latter is of a much more open and porous texture, and besides exhibits in its present state not the slightest trace of a skin.

Dedicated to Dr. J. S. Bowerbank, F.R.S., who has devoted his attention for many years to the Spongiadæ, and who is now giving to the scientific world, through the medium of the 'Philosophical Transactions,' the results of his important investigations.

Nov. 10, 1863.—E. W. H. Holdsworth, Esq., F.Z.S., in the Chair.

The Secretary read several communications addressed to him by Dr. George Bennett, F.Z.S., respecting the arrival of specimens of *Didunculus strigirostris* in Sydney. The first of these, dated June 18th, 1863, contained the following notes on this subject:—

“In the early part of June 1863 a living *Didunculus* was brought to Sydney by Mr. J. Williams from Apia, Upolu, one of the group of the Navigator Islands; and on the 15th of June and the following days I had several opportunities of examining the bird. At first it seemed rather shy and wild, but afterwards it became more tame, and I could examine it without its manifesting any fear. It is about the size of a Nicobar Pigeon (*Caloenas nicobarica*), but rather bulkier and rounder in form. Its plumage was not in good condition, owing to its having been recently confined in a cage on board ship, but it appeared healthy. This specimen, I should say, was a young bird with immature plumage, and the tooth of the lower mandible not yet developed. When I first examined it, the bird showed its fear by occasionally uttering some rapid ‘coos’ and by fluttering in its cage, but it subsequently became quite tame. It was captured, on the Island of Upolu, after being wounded in the wing, and was sold by a native to Mr. Williams. It has now been in captivity about nine months, and is kept in a cage, which is merely a box with rails in front, like a hen-coop. Here it can run on the floor, or sit on a low perch, or conceal itself in the corners, as it is particularly fond of doing, where, with its dark-coloured plumage, it cannot readily be distinguished. When disturbed, it would move gently and timidly across the cage, affording an excellent opportunity to the observer of examining it. It is a stupid-looking bird, and has no particular attraction, except the anomalous and extraordinary form of the beak, which cannot fail to excite the attention of the most ordinary spectator. The only sound it utters is the quick ‘Coo-coo-coo,’ to which I have already alluded, the beak being always a little open when the notes were emitted. The whole of its plumage is of a chocolate-red colour, deeper in tint on the back, tail, and the primaries and secondaries of the wings, the throat, breast, and wing-coverts being barred with light brown. The upper part of the head was rather bare, from the feathers having been rubbed off; but what remained were of a dark slate-colour. The base of the beak is orange-red, and the rest of the mandibles of a yellowish hue. The tarsi are not feathered; and the legs and feet are of a bright orange-red, similar in colour to those of the Kagu. The irides are dark reddish brown, and the cere round the eyes is flesh-colour. The bird is fed upon boiled rice, yams, and potatoes.”

Dr. Bennett's second letter, dated July 18th, contained the following additional particulars:—

“I have to add to my account of the bird sent last mail that this bird was captured within five miles of Apia, Island of Upolu; so that the bird is not yet quite extinct in that island, as has been

supposed even by the resident missionaries. It is very fond of the mountain-plantain, upon which it has often been found feeding in its wild state."

A third letter from Dr. Bennett (dated August 19th) contained the gratifying intelligence that a second specimen of the *Didunculus* had reached Sydney, and that Dr. Bennett, with his usual liberality, had purchased the pair of birds, and was intending to send them home to the Society the first convenient opportunity. The following extracts were read from this last communication:—

"Since my last letter another living specimen of the *Didunculus* has been brought to Sydney, by the Rev. Mr. Rigg, who procured it from a native on the Island of Savaii. This I have reason to believe is the identical bird that Mr. Trail, at the instigation of Mr. O'Hea, endeavoured to procure for me, as, in reply to Mr. Trail's inquiries respecting the bird, the native informed him it had just been sold to a European on the other side of the island. On the day after the arrival of the vessel, I went on board and saw the bird, which is a much finer specimen than the one in the possession of Mr. Williams. It appears to be fullgrown and in adult plumage, the head, neck, breast, and upper parts of the back being of a glossy greenish black; back, wings, tail, and under tail-coverts a deep chocolate-red colour; but I consider that the bird has only recently been changing its plumage, and that the present dark-green feathers will become more brilliant, and the chocolate-red colour of a still brighter hue. The legs and feet are of a bright red colour, and the claws yellowish white. The mandibles are of an orange-red colour, shading off near the tips to a light yellow. The cere round the eyes is also of a bright orange-red colour; eyes brownish black. It is agreed by every one with whom I have conversed, who have resided at the Navigators' Islands, that the *Didunculus* is nearly extinct, both from being eaten by the natives as well as from the cats, rats, and other vermin, and that most of the other Ground-Pigeons are following its fate from the same causes. The possessor of the last bird says he has never observed the bird to drink water since it has been in his possession. Its food at that time consisted of boiled yams, but it will eat bananas, apples, bread, and boiled potatoes. The lower mandible has the tooth well developed. This bird was very tame, and was eating some boiled yam very voraciously during the time I was inspecting it, bolting down very large pieces.

"This morning I examined both birds. They are evidently moulting, and the younger bird has grown very much since I last saw it, and is becoming now a much larger bird than the last arrival; from this I am inclined to think they may prove male and female. I this afternoon purchased these birds, after some difficulty. It is my intention to send them by Mr. Broughton of the 'La Hogue,' unless some very good opportunity occurs in the mean time, which is not probable. Our Acclimatization Society of New South Wales are desirous of purchasing one or both, and to send them to your Gardens in their name; and I have, at all events, secured them for

myself at present, but will let you know how they are progressing every mail. I hope these valuable birds will reach you alive; but should they die, I shall arrange to have them preserved in spirits, as the bodies, from their rarity, are also, I am aware, very valuable.

“We purchased last month a fine specimen of the ‘Lyre-bird’ (*Menura superba*), intending to send it to the Zoological Society. It was captured in the Illawarra district, and was a male; and the beautiful ‘lyre’-shaped tail was fully developed, and the whole of the plumage in excellent condition. It only survived a few days, showing how difficult it is to keep these birds in captivity.”

MISCELLANEOUS.

On a Function of Roots.

HENRICI has made some ingenious and interesting observations on the function of roots in supplying water to the plant, and on the development, under certain conditions, of special roots destined for this purpose. It is a matter of not infrequent occurrence that plants send roots into wells, cisterns, drain-pipes, &c., where they exist in continual contact with a body of water. In drain-pipes the roots of plants usually considered to be free from aquatic tendencies, such as rape (*Brassica*), sometimes accumulate to a surprising extent. Henrici surmised that the roots which most cultivated plants send down deep into the soil, even when the latter is by no means porous or inviting, are designed especially to bring up water from the sub-soil for the use of the plant. The following experiment was devised for the purpose of establishing the truth of this view.

On the 13th of May, 1862, a young raspberry plant, having but two leaves, was transplanted into a large glass funnel filled with garden-soil, the throat of the funnel being closed with a paper filter. The funnel was supported in the mouth of a large glass jar, and its neck reached nearly to the bottom of the latter, where it just dipped into a quantity of water. The soil in the funnel was at first kept moderately moist by occasional waterings. The plant remained fresh, and slowly grew, putting forth new leaves. After the lapse of several weeks, four strong roots penetrated the filter and extended down the empty funnel-neck, through which they emerged on the 21st of June, and thenceforward spread rapidly in the water of the jar. From this time forward, the soil was not watered any more, but care was taken to maintain the supply in the jar. The plant continued to develop slowly; its leaves, however, did not acquire a vivid green colour, but remained pale and yellowish; they did not wither until the usual time late in autumn. The roots continued to grow, and filled the water more and more. Near the end of December the plant had from seven to eight leaves, and a height of 8 inches. The water-roots were vigorous, very long, and beset with